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What is claimed is

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- 1. A method for high throughput screening of plant growth regulators comprising the steps of culturing photomixotrophic cells to which candidates for plant growth regulators were added and measuring cell growth on a large scale at the same time.
- 2. The method as set forth in claim 1, wherein the photomixotrophic cells are Marchantia polymorpha L. photomixotrophic cells or Nicotiana tabacum cv. BY4 photomixotrophic cells.
- 3. The method as set forth in claim 1, wherein the candidates for plant growth regulators are selected from a group consisting of synthetic compounds, natural compounds, plant extracts and fractions or extracts containing microorganism culture solutions.
- 20 4. The method as set forth in claim 1, wherein the culture is carried out in microwell plates.
 - 5. The method as set forth in claim 1, wherein the cell growth measurement is carried out by measuring optical density after treating 2,3,5-

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triphenyltetrazolium chlorolide to culture cells.

6. The method as set forth in claim 1, wherein the method comprises the following steps:

- 5 1) Culturing photomixotrophic cells in a microwell plate to which candidates for plant growth regulators are added;
 - 2) Treating 2,3,5-triphenyltetrazolium chlorolide thereto;
- 3) Reacting thereof by adding ethanol after removing solutions from the microwell plate;
 - 4) Transferring the reacting solution of the above step 3) into a new microwell plate; and
- 5) Measuring optical density of the microwell plate of the above step 4) with a high throughput screening reader.
- 7. The method as set forth in claim 6, wherein the step
 3 is carried out by treating 2,3,5
 triphenyltetrazolium chlorolide for 4.5-5.5 hours,
 removing solutions from microwells, adding 95%
 ethanol thereto, and then reacting thereof at 60℃
 for 1 hour.